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Form PTO-14 (REV. 1/06)		US Dept. of Commerce PATENT & TRADEMARK OFFICE		ATTY DOCKET NO. 128241		APPLICATION NO. 10/581,189	
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)				APPLICANT(S) Norihsa NAKAGAWA et al.			
				FILING DATE June 1, 2006		GROUP 3747	
U.S. PATENT DOCUMENTS							
Examiner Initials	Cite No.	Document Number	Date	Name			
FOREIGN PATENT DOCUMENTS							
Examiner Initials	Cite No.	Document Number	Date	Country	With English Abstract	With English Translation	
	1	JP A 2003-49681	02/21/2003	JAPAN	X	X	
	2	JP A 9-303182	11/25/1997	JAPAN	X	X	
OTHER DOCUMENTS							
Examiner Initials	Cite No.	(Including Author, Title, Date, Pertinent Pages, etc.)					
EXAMINER					DATE CONSIDERED		
/Jesse Bogue/					05/10/2010		
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

APPENDIX

JP 2003-49681-A discloses an exhaust emission purifying device which includes a storage/reduction type NOx catalyst and a three way catalyst arranged as a front-end catalyst upstream of the NOx catalyst. The device executes a rich spike control for reducing NOx stored in the NOx catalyst, and executes a lean spike control for controlling to keep the air/fuel ration of exhaust emission leaner than the theoretical air-fuel ratio in a given time period after the completion of the execution of the rich spike control, so that good amount of oxygen is stored in the three way catalyst to improve the ability to purify hydro carbon and carbon monoxide. Furthermore, the device controls the amount of oxygen flowing into the three way catalyst does not exceed the O2 storage capacity of the catalyst during the lean spike control. This control is also executed to purify the exhaust emission.

JP 9-303182-A discloses an exhaust emission control device which controls an air-fuel ratio of air-fuel mixture to a target level leaner than the theoretical air-fuel ratio during the idling of an engine, such that oxygen is stored in a catalyst to prevent generation of hydrogen sulfide. The device enriches the air-fuel ratio of air-fuel mixture when an intake air amount during the idling of an engine exceeds a given amount. Accordingly, the device is able to prevent generation of hydrogen sulfide prior to the start of a vehicle and to prevent degradation of exhaust emission. Furthermore, the device suppress the enrichment control when the temperature of the catalyst exceeds a given temperature. We also note that JP 9-303182-A has a corresponding English patent publication US 5918583A, although we have not examined its equivalency to the Japanese publication.